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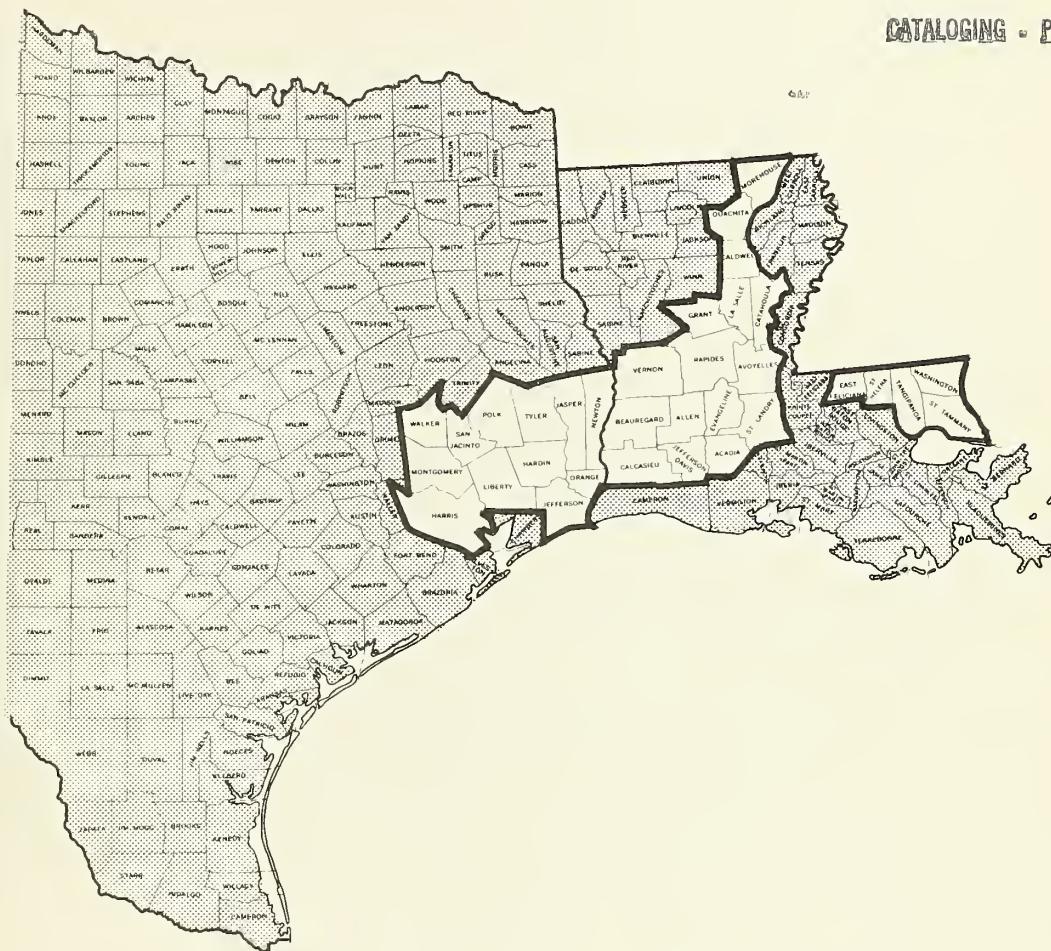
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SOIL SURVEY INTERPRETATIONS FOR WOODLANDS
IN THE
SOUTHERN COASTAL PLAIN AND ASSOCIATED AREAS
OF
LOUISIANA AND TEXAS
With Average Rainfall of 30- to 40-Inches
During the Frost-free Period

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PROGRESS REPORT W-14 - - OCTOBER 1969

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

This report contains interpretations of soil surveys for woodland use and management in the Southern Coastal Plain and associated areas of Louisiana and Texas, with mean precipitation of 30 to 40 inches during the frost-free period. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners, and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of technical guides, soil handbooks, and published soil survey reports.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the woodusing industry, and others cooperated in gathering field data. Most of the information concerning the productivity and soil suitability of southern hardwoods was compiled by Walter M. Broadfoot of the U.S. Forest Service, Southern Forest Experiment Station. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, includes some evaluations for individual soils. The soil series listed in column one (1) are those defined according to the current soil classification system and includes portions of soil associations mapped in low intensity surveys. Erosion and texture phases, within a soil series, are not shown except where differences in productivity, species suitability, or management problems exist.

Column two (2)includes a list of some of the commercially-important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees.

Priority between species will be influenced by local marketability and the owners' objectives, as well as the quality of wood products from a given species.

Column three (3) indicates the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (+) for each species where five or more plots for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. Site index is the average height of dominant trees at age 30 for cottonwood, age 35 for sycamore, and age 50 for all other species.

Column four (4) indicates the range of site index of the most important tree species in column two. The range of site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) evaluates the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the

tree crop. A rating of slight indicates equipment use is seldom limited in kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this physiographic area, as well as some of the important species listed in column two.

Column nine (9) shows the ordination of the soils into a woodland suitability group. A woodland suitability group is made up of kinds of soils that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3, 4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or year long, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but

includes flaggy soils.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

Subclass t (toxic substances). Soils that have within the rooting zone, excessive alkalinity, acidity, sodium salts, or other toxic substances that limit or impede development of desirable tree species.

Some kinds of soil may have more than one set of subclass characteristics.

Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

The numeral 4 indicates soils with no to slight management problems, and they are best for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management pro-

blems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 0 indicates the soils are not suitable for the production of major commercial wood products.

A fourth element, the letter "c" has been used to ordinate soils best suited for redcedar into a separate subgroup.

TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES
SOUTHERN COASTAL PLAIN

Indicator Forest Type or Species	: 1	: 2	: 3	: 4	: 5					
	: Very High	: High	: Moderately High	: Moderate	: Low					
	Site Index									
Cottonwood	(1) :	106+	:	96-105	:	86-95	:	76-85	:	75-
Yellow-poplar	(2) :	106+	:	96-105	:	86-95	:	76-85	:	75-
Sweetgum	(3) :	96+	:	86-95	:	76-85	:	66-75	:	65-
Water oak	(4) :	96+	:	86-95	:	76-85	:	66-75	:	65-
Loblolly pine	(5) :	96+	:	86-95	:	76-85	:	66-75	:	65-
Slash pine	(6) :	96+	:	86-95	:	76-85	:	66-75	:	65-
Shortleaf pine	(5) :	86+	:	76-85	:	66-75	:	56-65	:	55-
Longleaf pine	(6) :	86+	:	76-85	:	66-75	:	56-65	:	55-
Sou.-red oak	(7) :	86+	:	76-85	:	66-75	:	56-65	:	55-
Water tupelo	(8) :	86+	:	76-85	:	66-75	:	56-65	:	55-
Redcedar	(9) :	66+	:	56-65	:	46-55	:	35-45	:	35-

- (1) Broadfoot, W.M., 1960, Field Guide for Evaluating Cottonwood Sites, USFS Occ, Paper 178 (Fig.4).
- (2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar-So. Appalachians.
- (3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4).
- (4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-south, USFS Res. Paper SO-1 (Fig. 4).
- (5) Coile, T. S. and F. X. Schumacher, Jour. For 53: 432-453 (Fig. 4 and 8).
- (6) U. S. Forest Service, 1929 Volume, Yield, and Stand Tables for Second Growth Southern Pines, USDA Misc. Ppb1. 50 (Fig. 2, 3, 4).
- (7) Schnur, L. G., 1937, Yield, Stand and Volume Tables for Even-Aged Upland Oak Forests, USDA Tech. Bull. 560,(Fig. 2).
- (8) Applequist, M. D., 1959, Soil-Site Studies, Sou. Hardwoods (Fig. 7).
- (9) TVA 1948, Site Curves, E. Redcedar, Tennessee Valley.

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free RainfallPage 1 of 9

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species 1/	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Acadia 0-5% slopes	Loblolly pine Shortleaf pine Sweetgum Water oaks	86+5 75+5 85 80	79-92 80-91 - -	Slight	Moderate	Slight	Loblolly pine Longleaf pine Slash pine	2w8
Alaga 1-17% slopes	Loblolly pine Longleaf pine	81 70	76-86 65-75	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
Albany 0-5% slopes	Loblolly pine Slash pine Longleaf pine Shortleaf pine	79 80 70 73	72-88 72-88 66-72 72-76	Slight	Moderate	Moderate	Loblolly pine Slash pine	3w2
Angie 0-12% slopes	Loblolly pine Shortleaf pine Sweetgum Water oaks Blackgum Longleaf pine	87 77+6 86 86 - -	78-90 73-84 - - - -	Slight	Moderate	Slight	Loblolly pine Slash pine Sweetgum Sycamore Longleaf pine	2w8
Ardilla 0-5% slopes	Loblolly pine Shortleaf pine Slash pine Water oak White oaks Longleaf pine Red oaks	88+3 82 89+4 90 80 85 80	84-91 76-86 84-96 86-95 76-85 80-90 76-85	Slight	Moderate	Slight	Slash pine Loblolly pine Sycamore	2w8
Beaumont 0-1% slopes	Loblolly pine Water oaks Red oaks Tupelos Magnolia Bald cypress Green ash	90 85 80 - - - -	85-92 80-92 75-85	Slight	Moderate	Moderate	Loblolly pine Slash pine Magnolia Sweetgum	2c8
Beauregard 0-5% slopes	Loblolly pine Sweetgum White oaks Red oaks Shortleaf pine	91+6 90 80 80 83	88-102 80-100 2/ - 2/ 76-87	Slight	Moderate	Slight	Loblolly pine Sweetgum Slash pine Sycamore	2w8
Bernaldo 0-12% slopes	Loblolly pine Longleaf pine Shortleaf pine Red oaks White oaks Water oaks Sweetgum	87 76+3 80 80 70 85 90	82-94 70-79 2/ - 2/ 2/ - 84-96	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum	2o7
Bibb 0-5% slopes	Loblolly pine Sweetgum Cottonwood Green ash Cherrybark oak Nuttall oak Water oak Willow oak Sycamore	92+6 90+9 100 86+12 95+6 102+8 90+10 91+8 -	85-98 78-99 80-110 64-84 83-100 90-109 78-97 81-95 -	Slight	Severe	Moderate to Severe	Slash pine Loblolly pine Sweetgum Sycamore Cherrybark oak Green ash	2w9

1/ Site index estimated; based on a similar soil or another species on the same soil.

2/ Potential productivity attainable only on areas with adequate surface drainage.

3/ Ratings become moderate on areas with adequate surface drainage.

4/ Tree planting feasible only on areas with adequate surface drainage.

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bibb (Con't)	Tupelos White oaks	- -	- -					
Bienville 0-12% slopes	Loblolly pine Longleaf pine Shortleaf pine	90±4 80 85	83-99 75-85 75-90	Slight	Moderate	Moderate	Slash pine Loblolly pine	2s2
Blanton 0-12% slopes	Loblolly pine Longleaf pine	80 70±4	76-85 65-75	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
Boswell 1-25 % slopes	Loblolly pine Shortleaf pine Longleaf pine	83 70 65±5	78-90 65-75 54-75	Slight to Moderate	Moderate	Slight to Moderate	Loblolly pine	3c2
Bowie 0-12% slopes	Loblolly pine Longleaf pine Shortleaf pine	86 72±5 76±5	80-90 66-81 69-82	Slight	Slight	Slight	Loblolly pine Slash pine	2o1
Boy 0-8% slopes	Loblolly pine Shortleaf pine Longleaf pine	85±4 75±4 72	79-92 70-83 65-78	Slight	Slight	Moderate	Loblolly pine Slash pine	3s2
Caddo 0-5% slopes	Loblolly pine Sweetgum Water oak White oaks	89 94 88 -	84-96 85-100 80-95 -	Slight	Moderate	Moderate	Loblolly pine Slash pine	2w8
Cahaba 0-12% slopes	Loblolly pine Sweetgum Red oak Shortleaf pine White oaks	93 90 - - -	89-98 80-100 80-105 -	Slight	Slight	Slight	Loblolly pine Sycamore Sweetgum Slash pine	2o7
Chipley 0-5% slopes	Loblolly pine Shortleaf pine Longleaf pine	94±4 80 70±6	88-100 - 64-78	Slight	Moderate	Moderate	Loblolly pine Slash pine	2w2
Clodine 0-1% slopes	Loblolly pine Sweetgum Water oaks Red oaks	92 - - -	84-98 - - -	Slight	Severe	Severe	Loblolly pine Sweetgum	2w9
Conroe 0-12% slopes	Loblolly pine Shortleaf pine	77±5 70	71-85 65-75	Slight	Slight	Slight	Loblolly pine Slash pine Shortleaf pine	3o1
gravelly loamy fine soil, 0-12% slopes	Loblolly pine Shortleaf pine	70±5 60	55-66	Slight	Slight	Moderate	Loblolly pine Shortleaf pine	4f2
Crowley 0-3% slopes	Loblolly pine Sweetgum Water oaks Blackgum Green ash	93±4 - - - -	87-103 - - - -	Slight ¹ Severe ³ Moderate	Moderate	Moderate	Loblolly pine Sweetgum ^{4/}	2w9

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Edna</u> 0-5% slopes	<u>Loblolly pine</u> Sweetgum Water oaks Blackgum Red oaks	92 <u>2/</u> - - - -	82-98 - - - -	Slight	Severe <u>3</u> Severe <u>3</u>	Severe <u>3</u> Severe <u>3</u>	Loblolly pine Sweetgum	<u>4/</u> <u>4/</u> 2w9
<u>Elysian</u> 0-5% slopes	<u>Loblolly pine</u> Sweetgum Red oaks White oaks Shortleaf pine	92+3 90 80 75 80	86-96 85-95 75-85 - 75-85	Slight	Slight	Slight	Loblolly pine Sweetgum Slash pine Black walnut Sycamore	2o7
<u>Eustis</u> 0-17% slopes	<u>Loblolly pine</u> Longleaf pine	84+4 64	78-89 60-70	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
<u>Fuquay</u> 1-17% slopes	<u>Loblolly pine</u> Longleaf pine Shortleaf pine	85 70 75	80-91 65-74 70-80	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
<u>Garner</u> 0-8% slopes	<u>Loblolly pine</u> Water oaks Red oaks Sweetgum White oaks Green ash	89 96 - - - 78	82-95 90-101 - - - 70-84	Slight	Moderate	Moderate	Loblolly pine Slash pine Sweetgum	2c8
<u>Gore</u> 0-5% slopes	<u>Loblolly pine</u> Shortleaf pine	77+6 70	71-89 65-75	Slight	Moderate	Moderate	Loblolly pine Slash pine	3c2
<u>Gunter</u> 0-17% slopes	<u>Loblolly pine</u> Shortleaf pine Longleaf pine	80+4 70 <u>2/</u> 70 <u>2/</u>	76-83 - -	Slight	Moderate	Moderate	Loblolly pine Slash pine	3s2
<u>Guyton</u> 0-2% slopes	<u>Loblolly pine</u> Sweetgum Green ash Water oaks	90 90 - -	86-95 85-96 - -	Slight	Severe	Moderate	Loblolly pine Slash pine Sycamore	2w9
<u>Hockley</u> 0-5% slopes	<u>Loblolly pine</u> Water oaks Sweetgum Red oaks	89 90 <u>2/</u> 90 <u>2/</u> 80 <u>2/</u>	86-95 - - -	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum Black walnut	2o7
<u>Iuka</u> 0-2% slopes	<u>Loblolly pine</u> Longleaf pine Sweetgum Water oak Yellow-poplar Sycamore Red oaks White oaks	97+7 80 102+6 100+9 - - - -	90-105 75-85 90-109 88-107 - - - -	Slight	Moderate	Moderate	Loblolly pine Slash pine Sycamore Cottonwood Nuttall oak Cherrybark oak	1w8
<u>Izagora</u> 0-5% slopes	<u>Loblolly pine</u> Shortleaf pine Sweetgum Yellow-poplar Oaks	94 79+3 90 100 -	86-100 75-83 80-100 90-110	Slight	Moderate	Slight	Loblolly pine Slash pine Sweetgum	2w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Kalmia</u> 0-8% slopes	<u>Loblolly pine</u>	87±5	84-93				Slash pine	2w7
	Sweetgum	85	80-90				Loblolly pine	
	Yellow-poplar	96	90-105	Slight	Slight	Slight	Yellow-poplar	
	Red oaks	80	2/	-			Cherrybark oak	
	White oaks	80	2/	-				
<u>Kaufman</u> 0-5% slopes	<u>Sweetgum</u>	100	90-110	Slight	Severe	Severe	Cottonwood	lw6
	<u>Cottonwood</u>	105	90-120				Sweetgum	
	Water oaks	97	90-105				Sycamore	
	Red oaks	-	-				Cherrybark oak	
	White oaks	-	-					
	Green ash	-	-					
	<u>Sycamore</u>	95	85-105					
<u>Kenney</u> 0-17% slopes	<u>Loblolly pine</u>	87	80-93	Slight	Moderate	Moderate	Loblolly pine	2s2
	<u>Longleaf pine</u>	70	65-75				Slash pine	
<u>Kershaw</u> 0-25% slopes	<u>Longleaf pine</u>	55	-	Slight	Moderate	Severe	Slash pine	5s3
	<u>Shortleaf pine</u>	55	-				Sand pine	
<u>Kipling</u> 0-5% slopes	<u>Loblolly pine</u>	88	80-95	Slight	Moderate	Moderate	Loblolly pine	2c8
	<u>Sweetgum</u>	90	80-100				Sweetgum	
	Red oaks	-	-				Redcedar	
<u>Kirvin</u> 0-17% slopes	<u>Loblolly pine</u>	84	79-90	Slight	Slight	Slight	Loblolly pine	3o1
	<u>Shortleaf pine</u>	75	70-80				Slash pine	
	<u>Longleaf pine</u>	70	65-75					
<u>Kosse</u> 0-5% slopes	<u>Cottonwood</u>	110	100-115					lw9
	<u>Sweetgum</u>	100	90-110					
	Water oaks	95	90-105	Slight	Moderate	Severe	Loblolly pine	
	Elms	-	-				Sweetgum	
	Pecans	-	-				Slash pine	
	<u>Loblolly pine</u>	97	94-100					
<u>Lakeland</u> 0-25% slopes	<u>Green ash</u>	-	-					4s2
	<u>Cottonwood</u>	110	100-115					
	<u>Sweetgum</u>	100	90-110					
	Water oaks	95	90-105					
<u>Leaf</u> 0-2% slopes	Elms	-	-					2w9
	Pecans	-	-					
	<u>Loblolly pine</u>	97	94-100					
	<u>Slash pine</u>	97	94-100					
	<u>Longleaf pine</u>	61±4	56-66	Slight	Moderate	Moderate	Slash pine	
	<u>Longleaf pine</u>	75±5	64-81				Loblolly pine	
<u>Leaffield</u> 0-5% slopes	<u>Longleaf pine</u>	75	70-80				Slash pine	3w2
	<u>Longleaf pine</u>	61±4	56-66				Loblolly pine	
	<u>Longleaf pine</u>	1/	84-100	Slight	Moderate	Moderate	Longleaf pine	
	<u>Longleaf pine</u>	91±5	84-100				Longleaf pine	
	<u>Longleaf pine</u>	91	84-100				Longleaf pine	
	<u>Longleaf pine</u>	85	75-90				Longleaf pine	
<u>Lucy</u> 0-17% slopes	Water oaks	-	-				Longleaf pine	2s2
	Red oaks	-	-				Longleaf pine	
<u>Lucy</u> 0-17% slopes	White oaks	-	-				Longleaf pine	2s2
	<u>Loblolly pine</u>	86	80-91	Slight	Moderate	Moderate	Longleaf pine	
	<u>Longleaf pine</u>	70	65-74				Longleaf pine	

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lufkin 0-5% slopes	Loblolly pine Longleaf pine Shortleaf pine Sweetgum Water oaks	70 60 60 - -	- - - - -	Slight	Moderate	Severe	Loblolly pine	4w3
Luverne 0-25% slopes	Loblolly pine Longleaf pine	85 85	- -	Slight	Moderate	Slight	Loblolly pine Slash pine	3c2
Magnolia 0-17% slopes	Loblolly pine Longleaf pine	82+6 61	76-88 56-66	Slight	Slight	Slight	Loblolly pine Slash pine	3o1
Mantachie 0-5% slopes	Loblolly pine Sweetgum Water oak Cottonwood Green ash Sycamore Red oaks White oaks	98+7 100+6 94+5 92 88+10	90-106 88-107 82-101 82-102 66-93	Slight	Severe	Severe	Loblolly pine Slash pine Sycamore Cherrybark oak	1w9
Marietta 0-5% slopes	Sweetgum Cottonwood Green ash Sycamore Red oaks White oaks	97 100 90	90-105 90-110 80-100	Slight	Moderate	Moderate	Cottonwood Sycamore	1w5
McKarnie 0-5% slopes	Loblolly pine Longleaf pine	83 70	77-90 65-75	Slight	Moderate	Slight	Loblolly pine Slash pine Longleaf pine	3c2
McLaurin 0-17% slopes	Loblolly pine Longleaf pine Red oaks	90 72 80	86-95 66-75 75-85	Slight	Slight	Slight	Slash pine Loblolly pine	2o1
Morse 1-17% slopes	Loblolly pine Shortleaf pine	60 50	- -	Moderate	Severe	Severe	None	5t0
Muskogee 0-8% slopes	Loblolly pine Longleaf pine	80 70	75-85 65-75	Slight	Moderate	Slight	Loblolly pine Slash pine	3w8
Myatt 0-2% slopes	Loblolly pine Sweetgum Water oak Red oaks White oaks	95+6 92 86 - -	87-103 77-99 71-93 - -	Slight	Severe ^{3/} Severe ^{3/}	Severe ^{3/}	Loblolly pine Slash pine Shumard oak Sweetgum ^{4/}	2w9
Ochlockonee 0-5% slopes	Loblolly pine Sweetgum Water oaks Red oaks White oaks	98+5 90+5 82	90-105 94-105 70-89	Slight	Slight	Slight	Slash pine Loblolly pine Sycamore Cottonwood Yellow-poplar	1o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Oktibbeha 0-12% slopes	Loblolly pine Redcedar Red oaks	76+5 45 -	69-82 40-50 -	Slight	Moderate	Moderate	Loblolly pine Redcedar	3c8
Ora 0-12% slopes	Loblolly pine Longleaf pine Sweetgum Red oaks White oaks	86+6 70 85 - -	87-103 66-75 80-94 - -	Slight	Slight	Slight	Loblolly pine Slash pine	2o7
Orangeburg 0-17% slopes	Loblolly pine Slash pine Longleaf pine Shortleaf pine	85+5 86 78+5 80	77-90 78-90 70-84 -	Slight	Slight	Slight	Loblolly pine Slash pine	2o1
Osier 0-5% slopes	Slash pine Loblolly pine Longleaf pine	80 80 68	2/ 2/ 62-73	72-88 72-88 -	Slight	Severe 3/ Severe 3/ Severe	Slash pine Loblolly pine	4/ 4/ 3w3
Plummer 0-2% slopes	Slash pine Loblolly pine Water tupelo	88+8 88 1/ 60	2/ 2/ 77-93 77-93	Slight	Severe 3/ Severe 3/ Severe	3/ 3/ 3/ 3/ Severe	Slash pine Loblolly pine	4/ 4/ 2w3
Prentiss 0-5% slopes	Loblolly pine Longleaf pine Sweetgum Red oaks	90 76 90 80	85-96 70-81 84-96 -	Slight	Slight	Slight	Loblolly pine Sycamore Slash pine Cherrybark oak	2o7
Red Bay 1-15% slopes	Loblolly pine Slash pine Longleaf pine Red oaks	1/ 87 87 70 80	80-94 80-94 65-75 -	Slight	Slight	Slight	Slash pine Loblolly pine	2o1
Riverview 0-3% slopes	Loblolly pine Sweetgum Red oaks	97 10 -	90-104 103-116 -	Slight	Slight	Slight	Slash pine Loblolly pine Sycamore	1o7
Robertsdale 0-2% slopes	Loblolly pine Sweetgum Water oaks Shortleaf pine Red oaks Blackgum	1/ 81+3 80 1/ 80 71 -	77-85 - - 69-72 - -	Slight	Moderate	Moderate	Loblolly pine Slash pine Sweetgum Sycamore	3w8
Ruston 0-17% slopes	Longleaf pine Loblolly pine	76 88	70-82 84-94	Slight	Slight	Slight	Slash pine Loblolly pine	2o1
Sacul 2-25% slopes	Loblolly pine Red oaks White oaks Longleaf pine Shortleaf pine	82 70 70 - 70	78-86 - - - -	Slight	Moderate	Slight	Loblolly pine Slash pine Longleaf pine	3c2
Sango 0-5% slopes	Loblolly pine Shortleaf pine Red oaks	95 80 75	- - -	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum	2o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE Page 7 of 9
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1) Sango (Con't)	White oaks Sweetgum	60 -	-					(8) (9)
Savannah 0-12% slopes	Loblolly pine Longleaf pine Sweetgum Red oaks White oaks	88 76 90 - -	83-94 69-80 85-95 - -	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum Sycamore	2w7
Sawyer 0-5% slopes	Loblolly pine Slash pine Sweetgum Red oaks White oaks	90 90 90 - -	83-95 - 83-96 - -	Slight	Moderate	Slight to Moderate	Slash pine Loblolly pine Sweetgum	2w8
Segno 0-8% slopes	Loblolly pine Longleaf pine Shortleaf pine Sweetgum Red oaks	90+5 75 77 90 80	82-97 - - - -	Slight	Slight	Slight	Loblolly pine Slash pine Sweetgum	2o7
Shubuta 0-17% slopes	Loblolly pine Longleaf pine Shortleaf pine	84 70 1/70	76-87 - -	Slight	Slight	Slight	Loblolly pine Slash pine	3o1
Sorter 0-1% slopes	Loblolly pine Shortleaf pine Water oak Red oak Sweetgum Elms Longleaf pine Water tupelo	91+5 80 90 1/80 1/90 - 80 -	2/82-98 2/75-85 84-95 - - - - -	Slight	Severe	3/Severe	Loblolly pine Sweetgum Slash pine	2w9
Splendora 0-5% slopes	Loblolly pine Water oak Sweetgum Red oaks Longleaf pine Shortleaf pine Blackgum	94+4 1/90 90 1/80 1/80 76 -	84-100 - 85-96 - - 70-82 -	Slight	Moderate	Moderate	Loblolly pine Sweetgum Slash pine	2w8
Stough 0-5% slopes	Loblolly pine Sweetgum Blackgum Red oaks White oaks	95+5 82 - - -	88-101 75-90 - - -	Slight	Moderate	Slight	Loblolly pine Shumard oak Sweetgum Slash pine	2w8
Summerfield 0-2% slopes	Loblolly pine Shortleaf pine Sweetgum Water oaks Longleaf pine	82 75+5 80 1/80 1/70	78-85 67-81 - - -	Slight	Moderate	Moderate	Loblolly pine Sweetgum Slash pine	3w8
Sumter 1-17% slopes	Redcedar	37	32-45	Moderate	Moderate	Moderate	Redcedar	4c2
Susquehanna 1-17% slopes	Loblolly pine Longleaf pine Shortleaf pine Red oaks	82+6 73+4 69+8 -	73-88 63-80 60-73 -	Slight to Moderate	Moderate	Moderate	Loblolly pine Slash pine	3c2

TABLE 2. SOIL RATINGS FOR WOODLAND USE
Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Teneha 1-12% slopes	Loblolly pine Longleaf pine Shortleaf pine	80 <u>70</u> 70	75-85 65-75 65-75	Slight	Moderate	Moderate	Slash pine	3s2
Treblec 0-2% slopes	Loblolly pine Slash pine Sweetgum Water oak	95+6 <u>2/</u> 95 <u>2/</u> 90 <u>2/</u> 1/ 90 <u>2/</u>	88-102 - - -	Slight	Severe ^{3/} Severe	Severe	Loblolly pine Slash pine Sweetgum Sycamore Nuttall oak	2w9
Troup Loamy sand to sandy loam, 0-17% slopes	Loblolly pine Longleaf pine Shortleaf pine	82+5 64+5 70	76-88 58-70 60-75	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
Tuckerman Loamy sand to silt loam, 0-2% slopes	Loblolly pine Slash pine Sweetgum Tupelos Red oaks	92 <u>2/</u> 91 <u>2/</u> 90 <u>2/</u> - -	82-98 82-98 85-96 - -	Slight	Severe	Severe	Loblolly pine Slash pine Sweetgum	2w9
Tuscumbia clay to silty clay loam, 0-5% slopes	Cottonwood Sweetgum Green ash Sycamore Red oaks Hackberry Elms	97 86 95 - - - -	90-115 80-90 85-105 - - - -	Slight	Severe	Severe	Sweetgum Cottonwood Sycamore Green ash	2w6
Una 0-5% slopes	Cottonwood Sweetgum Water oak Green ash Tupelos Red oaks White oaks Sycamore	90 101 - 94+3 - - - 90 <u>1/</u>	80-100 87-103 - 75-102 - - - 75-100	Slight	Severe	Severe	Cottonwood Sweetgum Sycamore Nuttall oak Cherrybark oak	2w6
Vaiden 2-17% slopes	Loblolly pine Red oaks Redcedar	76+5 - 45	70-85 - 40-50	Slight	Moderate	Moderate	Loblolly pine Redcedar	3c8
Wagram 0-17% slopes	Loblolly pine Longleaf pine	82+5 67+4	76-88 60-73	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2
Waller 0-2% slopes	Loblolly pine Water oaks Sweetgum	93+6 <u>2/</u> 90 90	84-100 - -	Slight	Severe ^{3/} Severe	Severe	Loblolly pine Sweetgum Slash pine	2w9
Wicksburg 0-12% slopes	Loblolly pine Longleaf pine	83 70	76-88 65-74	Slight	Moderate	Moderate	Slash pine Loblolly pine	3s2

TABLE 2. SOIL RATINGS FOR WOODLAND USE
 Louisiana and Texas, 30 to 40 inch Frost-free Rainfall

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Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and a brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the mapping units within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY
 Coastal Plain of Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

Page 1 of 4

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
lw7 Soils with very high potential productivity; no serious management problems; suitable for southern hardwoods and/or southern pines	Ochlockonee, 0-5% slopes Riverview, 0-3% slopes	Loblolly pine Sweetgum Red oaks White oaks Black walnut Sycamore	100 100 90-100 90 - 110	Loblolly pine Slash pine Black walnut Cherrybark oak
lw5 Seasonally wet soils with very high potential productivity; moderate equipment limitations and seedling mortality; best suited for southern hardwoods.	Marietta 0-5% slopes	Sweetgum Cottonwood Sycamore Green ash Red oaks White oaks	100 110 110 90 90-100 90	Sweetgum Sycamore Cottonwood
lw6 Excessively wet clayey soils with very high potential productivity; severe equipment restrictions and moderate to severe seedling mortality; best suited for water-tolerant hardwoods.	Kaufman, 0-5% slopes	Sweetgum Cottonwood Water oak Ash Red oaks White oaks	100 110 100 - - -	Sycamore Sweetgum Durand oak Cottonwood
lw8 Seasonally wet soils with very high potential productivity; moderate equipment restrictions and slight to moderate seedling mortality; suitable for southern hardwoods and/or pines	Iuka, 0-5 % slopes	Loblolly pine Slash pine Cottonwood Red oaks White oaks Sycamore	100 100 100 - - -	Loblolly pine Slash pine Cottonwood Sycamore Cherrybark oak
lw9 Excessively wet soils with very high potential productivity; severe equipment restrictions and moderate to severe seedling mortality; suitable for water-tolerant hardwoods and/or southern pines	Kosse, 0-5% slopes Mantachie, 0-5% slopes	Cottonwood Sweetgum Water oaks Loblolly pine Elms Pecan Green ash	110 100 90-100 100 - - -	Loblolly pine Slash pine Sweetgum Cottonwood Sycamore Nuttall oak
2o1 Loamy upland soils with high potential productivity; no serious management problems; best suited for southern pines	Bowie, 012% slopes Orangeburg, 0-17% slopes Red Bay, 1-17% slopes McLaurin, 1-17% slopes Ruston, 0-17% slopes	Loblolly pine Longleaf pine Shortleaf pine Red oaks	90 70 80 80	Slash pine Loblolly pine
2o7 Loamy soils with high potential productivity; no serious management problems; suitable for southern pines and/or hardwoods.	Bernaldo, 0-12% slopes Cahaba, 0-12% slopes Elysian, 0-5% slopes Hockley, 0-5% slopes Kalmia, 0-8% slopes Ora, 0-12% slopes Prentiss, 0-5% slopes Sango, 0-5% slopes Segno, 0-8% slopes Savannah, 0-12% slopes	Loblolly pine Longleaf pine Sweetgum Red oaks White oaks Black cherry Black walnut	90 70 90 80 - - -	Loblolly pine Slash pine Sweetgum Sycamore

TABLE ³. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY
Coastal Plain of Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>2s2</u> Sandy soils with high productivity; moderate equipment limitations and seedling mortality; best suited for southern pines	Bienville, 0-12% slopes Kenney, 0-5% slopes Lucy, 0-17% slopes	Loblolly pine Longleaf pine Shortleaf pine	90 70-80 80	Slash pine Loblolly pine
<u>2c8</u> Clayey soils with high productivity; moderate equipment restrictions and seedling mortality; suitable for southern hardwoods and/or pines	Beaumont, 0-1% slopes Garner, 0-8% slopes Kipling, 0-5% slopes	Loblolly pine Water oaks Tupelos Bald cypress Green ash Red oaks Sweetgum	90 90 - - - - 90	Loblolly pine Slash pine Sweetgum
<u>2w2</u> Seasonally wet sandy soils with high potential productivity; moderate equipment restrictions and slight to moderate seedling mortality; best suited for southern pines	Chipley, 0-5% slopes	Loblolly pine Longleaf pine Shortleaf pine	90 70	Slash pine Loblolly pine
<u>2w3</u> Excessively wet soils with high potential productivity; severe equipment limitations and seedling mortality w/o surface drainage; best suited for southern pines.	Plummer, 0-2% slopes	Loblolly pine Longleaf pine	90 70	Slash pine <u>1/</u> Loblolly pine <u>2/</u>
<u>2w6</u> Excessively wet soils with high potential productivity; severe equipment limitations and moderate to severe seedling mortality; suitable for water-tolerant hardwoods.	Tuscumbia, 0-5% slopes Una, 0-5% slopes	Cottonwood Sweetgum Green ash Sycamore Tupelos Elms Red oaks	100 90 90 90 - - -	Cottonwood Sycamore
<u>2w8</u> Seasonally wet soils with high potential productivity; moderate equipment restrictions and slight to moderate seedling mortality; suitable for southern hardwoods and/or pines.	Acadia, 0-5% slopes Angie, 0-12% slopes Ardilla, 0-5% slopes Beauregard, 0-5% slopes Caddo, 0-5% slopes Izagora, 0-5% slopes Sawyer, 0-5% slopes Splendora, 0-5% slopes Stough, 0-5% slopes	Loblolly pine Sweetgum Red oaks Water oaks Green ash Blackgum Longleaf pine	90 90 80 90 - - 70-80	Loblolly pine Slash pine Sycamore Sweetgum
<u>2w9</u> Excessively wet soils with high potential productivity; severe equipment limitations and seedling mortality w/o adequate surface drainage; suitable for southern pines and/or hardwoods.	Bibb, 0-5% slopes Clodine, 0-1% slopes Crowley, 0-3% slopes Edna, 0-5% slopes Guyton, 0-2% slopes Leaf, 0-2% slopes Myatt, 0-2% slopes Sorter, 0-1% slopes Treblon, 0-2% slopes Tuckerman, 0-2% slopes Waller, 0-2% slopes	Loblolly pine Sweetgum Water oaks Red oaks Tupelos Green ash Sycamore	90 90 90 - - - -	Loblolly pine <u>1/</u> Slash pine <u>1/</u> Sycamore Nuttall oak Sweetgum <u>2/</u>

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY
Coastal Plain of Louisiana and Texas, 30 to 40 Inch Frost-free RainfallPage 3 of 4

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>3ol</u> Soils with moderately high potential productivity; no serious management problems; best suited for southern pines.	Conroe, 0-12% slopes Kirvin, 0-17% slopes Magnolia, 0-17% slopes Shubuta, 0-17% slopes	Loblolly pine Longleaf pine Red oaks Shortleaf pine	80 70 70 70	Loblolly pine Slash pine
<u>3s2</u> Sandy soils with moderately high potential productivity; moderate equipment restrictions and seedling mortality; best suited for southern pines.	Alaga, 1-17% slopes Blanton, 0-12% slopes Boy, 0-8% slopes Eustis, 0-17% slopes Fuquay, 0-17% slopes Gunter, 0-17% slopes Teneha, 1-12% slopes Troup, 0-17% slopes Wagram, 0-17% slopes Wicksburg, 0-12% slopes	Loblolly pine Longleaf pine Shortleaf pine	80 70 70	Slash pine Loblolly pine
<u>3c2</u> Clayey soils with moderately high potential productivity; moderate equipment restrictions and seedling mortality best suited for southern pines.	Boswell, 1-25% slopes Gore, 0-5% slopes Luverne, 0-25% slopes McKamie, 0-5% slopes Sacul, 2-25% slopes Susquehanna, 1-17% slopes	Loblolly pine Longleaf pine Shortleaf pine Red oaks	80 70 70 70	Loblolly pine Slash pine
<u>3c8</u> Clayey soils with moderately high potential productivity; moderate equipment limitations and seedling mortality; suitable for southern hardwoods, pines and redcedar.	Oktibbeha, 0-12% slopes Vaiden, 2-17% slopes	Loblolly pine Redcedar Red oaks Longleaf pine	80 50 70 70	Redcedar Loblolly pine Slash pine
<u>3w2</u> Seasonally wet sandy soils with moderately high potential productivity; moderate equipment restrictions and seedling mortality; best suited for southern pines.	Albany, 0-5% slopes Leafield, 0-5% slopes	Slash pine Loblolly pine Longleaf pine	80 80 70	Slash pine Loblolly pine
<u>3w3</u> Excessively wet sandy soils with moderately high potential productivity; severe equipment restrictions and seedling mortality w/o surface drainage; best suited for southern pines.	Osier, 0-5% slopes	Slash pine Loblolly pine Longleaf pine	80 80 70	Slash pine <u>2/</u> Loblolly pine <u>2/</u>
<u>3w8</u> Seasonally wet soils with moderately high potential productivity; moderate equipment restrictions and seedling mortality; suitable for southern hardwoods and/or pines.	Muskogee, 0-8% slopes Robertsdale, 0-2% slopes Summerfield, 0-2% slopes	Loblolly pine Water oaks Sweetgum Red oaks	80 80 80 70	Loblolly pine Slash pine Sweetgum Sycamore

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY
Coastal Plain of Louisiana and Texas, 30 to 40 Inch Frost-free Rainfall

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Woodland Suitability Group (Symbol and Description) (1)	Soils (2)	Productivity		Species Suitable for Planting (5)
		Tree Species (3)	Site Class (4)	
<u>3w9</u> Excessively wet soils with moderately high potential productivity; severe equipment restrictions and seedling mortality suitable for water-tolerant hardwoods and southern pines.	Wrightsville, 0-1% slopes	Loblolly pine Sweetgum Water oaks Tupelos	80 1/ 80 1/ 80 -	Loblolly pine 2/ Slash pine 2/ Sweetgum 2/ Nuttall oak
<u>4s2</u> Sandy soils with moderate productivity; moderate equipment restrictions and seedling mortality; best suited for southern pines.	Lakeland, 0-25% slopes	Loblolly pine Longleaf pine	70+ 60	Slash pine Longleaf pine
<u>4f2</u> Gravelly soils with moderate productivity; moderate seedling mortality; best suited for southern pines.	Conroe (gravelly), 0-12% slopes	Loblolly pine Longleaf pine	70 60	Shortleaf pine Loblolly pine
<u>4w3</u> Excessively wet soils with moderate productivity; moderate equipment restrictions and severe seedling mortality; best suited for southern pines.	Lufkin, 0-5% slopes	Loblolly pine Longleaf pine	70 60	Loblolly pine
<u>4c2c</u> Clayey soils with moderate productivity; moderate equipment restrictions and seedling mortality; best suited for red cedar	Sumter, 1-17% slopes	Redcedar	40	Redcedar
<u>5s3</u> Sandy soils with low productivity; moderate equipment restrictions and severe seedling mortality; best suited for southern pines.	Kershaw, 0-25% slopes	Loblolly pine Longleaf pine Shortleaf pine	60 50	Longleaf pine Sand pine Slash pine
<u>5t0</u> Soils with low productivity and toxic substances in the rooting zone; not generally suitable for the production of commercial wood products.	Morse, 1-17% slopes	Loblolly pine	55	None

